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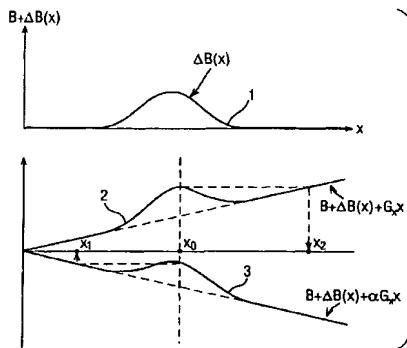
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(57) Abstract: A method and apparatus are disclosed for concurrently acquiring two sets of Magnetic Resonance Imaging (MRI) image data during the same image data acquisition interval in which the magnetic field associated with acquisition of the first data set is caused to differ from the magnetic field associated with acquisition of the second data set. The method includes repeatedly changing the magnetic field in a pre-determined manner during the continuous acquisition of image data comprising the two sets. The relationship between the differing magnetic fields, most preferably the relationship between differing gradient fields, is then employed in conjunction with the first and second data sets to correct image distortions arising in images constructed according to the data in either set alone.



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